REMARKS

This paper is being provided in response to the Final Office Action dated June 24, 2005 for the above-referenced application. In this response, Applicants have amended claims 63, 71, 80, 81, 86, 92, 94, and 103 in order to clarify that which Applicants deem to be the invention. Applicants respectfully submit that the amendments to the claims are all supported by the originally filed application.

The rejection of claims 63-81 and 86-103 under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 6,058,389 to Chandra et al. (hereinafter "Chandra") is hereby traversed and reconsideration thereof is respectfully requested in view of amendments to the claims provided herein.

Claims 63, as amended herein, recites a method of sending data that includes obtaining a first predetermined value for a sequence number, obtaining blocks of data, where each of the blocks of data corresponds to a packet of data, assigning the first predetermined value as the sequence number to each of the packets of data where at least two packets of data are assigned the same sequence number, and, in response to the sequence number becoming equal to a second predetermined value different from the first predetermined value, acknowledging receipt of the blocks of data corresponding to the packets of data that are assigned the first predetermined value as the sequence number and sending the packets of data that are assigned the first predetermined value as the sequence number to a destination, where packets of data associated with the same sequence number are sent to the destination in an order that is independent of an

order in which the packets are obtained. Claims 64-70 depend, directly or indirectly, from claims 63.

Claim 71, as amended herein, recites a method of receiving data, that includes accumulating received packets of data having a sequence number equal to a first predetermined value where at least two packets of data have the same sequence number, obtaining a first indication that the sequence number equals the first predetermined value, obtaining a second indication that the sequence number equals a second predetermined value different from the first predetermined value, and, in response to obtaining the second indication, transferring data corresponding to packets of data having the sequence number equal to the first predetermined value to a receiving device, where packets of data associated with the same sequence number are transferred to the receiving device in an order that is independent of an order in which the packets are accumulated. Claims 72-79 depend, directly or indirectly, from claim 71.

Claim 80, as amended herein, a method of transferring data that includes obtaining a first predetermined value for a first sequence number, obtaining blocks of data, where each of the blocks of data corresponds to a packet of data, assigning the first predetermined value as the first sequence number to each of the packets of data where at least two packets of data are assigned the same sequence number, in response to the first sequence number becoming equal to a second predetermined value different from the first predetermined value, acknowledging receipt of the blocks of data corresponding to the packets of data that are assigned the first predetermined value as the sequence number and sending the packets of data that are assigned the first predetermined value as the sequence number to a destination, where packets of data associated

with the same sequence number are sent to the destination in an order that is independent of an order in which the packets are obtained, accumulating received packets of data having a sequence number equal to the first predetermined value, obtaining a first indication that the sequence number equals the first predetermined value, obtaining a second indication that the sequence number equals a second predetermined value different from the first predetermined value, and, in response to obtaining the second indication, transferring data corresponding to packets of data having the sequence number equal to the first predetermined value to a receiving device, where packets of data associated with the same sequence number are transferred to the receiving device in an order that is independent of an order in which the packets are accumulated.

Claim 81, as amended herein, recites a computer system that includes a host performing a data operation for transferring blocks of data from a first device to a second device, a first WAN blade connected to the first device, a second WAN blade connected to the first WAN blade by a network, the second device being connected to the second WAN blade, where the first WAN blade includes machine executable code that receives the blocks of data from the first storage device, each of the blocks corresponding to a packet of data, assigns a first predetermined value to each of the packets of data where at least two packets of data are assigned the same sequence number, and, in response to receiving a second predetermined value different than the first predetermined value, acknowledges receipt of the blocks of data associated with the first predetermined value and sending the packets of data that are assigned the first predetermined value as a sequence number to the second device, where packets of data associated with the same sequence number are sent to the destination in an order that is independent of an order in

which the packets are received and the second WAN blade includes machine executable code that receives the packets of data associated with the first predetermined value, obtains an indication of the first predetermined value as a sequence number, obtains a second indication that the sequence number equals a second predetermined value different from the first predetermined value, and in response to obtaining the second indication, transfers data corresponding to packets of data having the sequence number equal to the first predetermined value to the second device, where packets of data associated with the same sequence number are transferred to the second device in an order that is independent of an order in which the packets are received.

Claim 86, as amended herein, recites a computer program product, implemented in a computer-readable medium, for sending data. The computer program product is recited as including machine executable code that obtains a first predetermined value for a sequence number, machine executable code that obtains blocks of data, where each of the blocks of data corresponds to a packet of data, machine executable code that assigns the first predetermined value as the sequence number to each of the packets of data where at least two packets of data are assigned the same sequence number, and machine executable code that, in response to the sequence number becoming equal to a second predetermined value different from the first predetermined value, acknowledges receipt of the blocks of data corresponding to the packets of data that are assigned the first predetermined value as the sequence number and sending the packets of data that are assigned the first predetermined value as the sequence number to a destination, where packets of data associated with the same sequence number are sent to the destination in an order that is independent of an order in which the packets are obtained. Claims 87-93 depend, directly or indirectly, from claim 86.

Claim 94, as amended herein, recites a computer program product, implemented in a computer-readable medium, for receiving data. The computer program product is recited as including machine executable code that accumulates received packets of data having a sequence number equal to a first predetermined value where at least two packets of data have the same sequence number, machine executable code that obtains a first indication that the sequence number equals the first predetermined value, machine executable code that obtains a second indication that the sequence number equals a second predetermined value different from the first predetermined value, and machine executable code that, in response to obtaining the second indication, transfers data corresponding to packets of data having the sequence number equal to the first predetermined value to a receiving device, where packets of data associated with the same sequence number are transferred to the receiving device in an order that is independent of an order in which the packets are accumulated. Claims 95-102 depend, directly or indirectly, from claim 94.

Claim 103, as amended herein, recites a computer program product, implemented in a computer-readable medium, for transferring data. The computer program product is recited as including machine executable code that obtains a first predetermined value for a first sequence number, machine executable code that obtains blocks of data, where each of the blocks of data corresponds to a packet of data, machine executable code that assigns the first predetermined value as the first sequence number to each of the packets of data where at least two packets of data are assigned the same sequence number, machine executable code that, in response to the first sequence number becoming equal to a second predetermined value different from the first

predetermined value, acknowledges receipt of the blocks of data corresponding to the packets of data that are assigned the first predetermined value as the sequence number and sending the packets of data that are assigned the first predetermined value as the sequence number to a destination, where packets of data associated with the same sequence number are sent to the destination in an order that is independent of an order in which the packets are obtained, machine executable code that accumulates received packets of data having a sequence number equal to the first predetermined value, machine executable code that obtains a first indication that the sequence number equals the first predetermined value, machine executable code that obtains a second indication that the sequence number equals a second predetermined value different from the first predetermined value, and machine executable code that, in response to obtaining the second indication, transfers data corresponding to packets of data having the sequence number equal to the first predetermined value to a receiving device, where packets of data associated with the same sequence number are transferred to the receiving device in an order that is independent of an order in which the packets are accumulated.

Chandra discloses a message queuing system integrated into a database system. Transactions can create messages using an enqueue operation and consume messages by using a dequeue operation. Messages are selected for consumption based upon the control information stored with the message (Column 6, lines 59-63), which includes the sequence numbers of the messages. Column 10, beginning at line 55, discloses:

> By default, messages are ordered in ascending or first in, first out (FIFO) order. The order of a message also can be specified using a priority code, or by a sequence deviation parameter...

Column 8, lines 41-46 disclose:

> To enable users to specify a default sorting order for each queue table when a queue table is created, the queuing system also includes a Queue Table Sort table 214. Each row in the Queue Table Sort table 214 represents a sort order for a queue table

Column 24, beginning at line 55 discloses:

> ...when two messages are enqueued with the same priority, the message that was enqueued earlier will be dequeued first. However, if two messages have different priorities, the message with the higher priority will be dequeued first.

Thus, Chandra discloses that messages may be dequeued according to one of the following options 1-4:

1. First in first out (fifo), disclosed as being the default, see column 10, beginning at line 55
2. Priority code specified by user, see column 10, beginning at line 55
3. According to a queue sort table, see column 8, lines 41-46
4. According to priority, where messages with the same priority are dequeued in the order that the messages were enqueued (i.e., first in first out), see column 24 beginning at line 55

Applicants respectfully submit that Chandra does not show, teach, or suggest a feature of the present claimed invention, recited in each of the independent claims in various forms, where at least two packets of data are assigned the same sequence number and packets of data associated with the same sequence number are sent to the destination in an order that is independent of an order in which the packets are obtained. Instead, Chandra specifically

discloses dequeuing options 1-4, none of which correspond to the recitation in the present claims, as set forth in detail below:

In the case of option 1, by definition a fifo does not assign any two packets the same sequence number (as recited in the present claims) since in a fifo, each item is ahead or behind each other item in the fifo. In addition, using a fifo does not cause packets of data associated with the same sequence number to be sent to the destination in an order that is independent of an order in which the packets are obtained, as recited in the present claims.

With respect to options 2 and 4 (which appear to be similar if not the same), Chandra specifically discloses that, when two messages are enqueued with the same priority, the message that was enqueued earlier will be dequeued first. This is a fifo within each priority. In such a case, messages with the same priority are *not* sent to the destination in an order that is independent of an order in which the packets are obtained (as recited in the present claims). Instead, Chandra teaches that messages with the same priority are sent to the destination in an order that is *dependent* of an order in which the packets are obtained (i.e., first in first out), contrary to the specific recitation in the present claims.

For option 3, there does not appear to be any discussion regarding any packets (messages) in the queue sort table having the same sequence number (as specifically recited in the present claims). There also does not appear to be any disclosure regarding dequeuing packets (messages) in the queue sort table that have the same sequence number in an order that is independent of the order that the Packets (messages) are obtained as recited in the present claims.

It appears that, at most, the queue sort table could be deemed to represent a *reordering* of the default fifo, but still does not correspond to the recited features of having the packets (messages) with the same sequence number or having packets (messages) with the same sequence number be dequeued in an order that is independent of an order in which the packets (messages) are obtained.

The present claimed invention provides a mechanism whereby a plurality of data packets may be assigned the same sequence number so that the order of packets having the same sequence number does not matter. The present claimed invention creates an order dependency by assigning packets different sequence numbers so that, for example, if packets A, B, and C were all assigned different sequence numbers, then those packets would be order dependent according to the sequence numbers. However, packets for which the order does not matter may all be assigned the same sequence number and thus, if packets A, A', and A'' were assigned the same sequence number, those packets may be handled in any order. Thus, as recited in the claims as presently amended, packets with the same sequence number are all sent, transferred, etc. in an order that is independent of the order that packets are obtained or accumulated.

For the reasons set forth above, Applicants respectfully request that this rejection be withdrawn.

The rejection of claims 82-85 under 35 U.S.C. 103(a) as being unpatentable over Chandra in view of U.S. Patent No. 6,014,710 to Talluri, et al. (hereinafter "Talluri") is hereby traversed

and reconsideration thereof is respectfully requested in view of amendments to the claims contained herein.

Claims 82-85 depend from claim 81, discussed above.

Talluri discloses storage nodes of a network with virtual and physical addresses for mapping data among the storage devices.

Applicant respectfully submits that the deficiencies of Chandra with respect to claim 81, discussed above, are not overcome by the addition of the Talluri reference. Accordingly, Applicants respectfully request that this rejection be withdrawn.

Based on the above, applicant respectfully requests that the Examiner reconsider and withdraw all outstanding rejections and objections. Favorable consideration and allowance are earnestly solicited. Should there be any questions after reviewing this paper, the Examiner is invited to contact the undersigned at 617-248-4038.

Respectfully submitted,

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